LANDING ERROR SCORING SYSTEM
Injury risk screening tool

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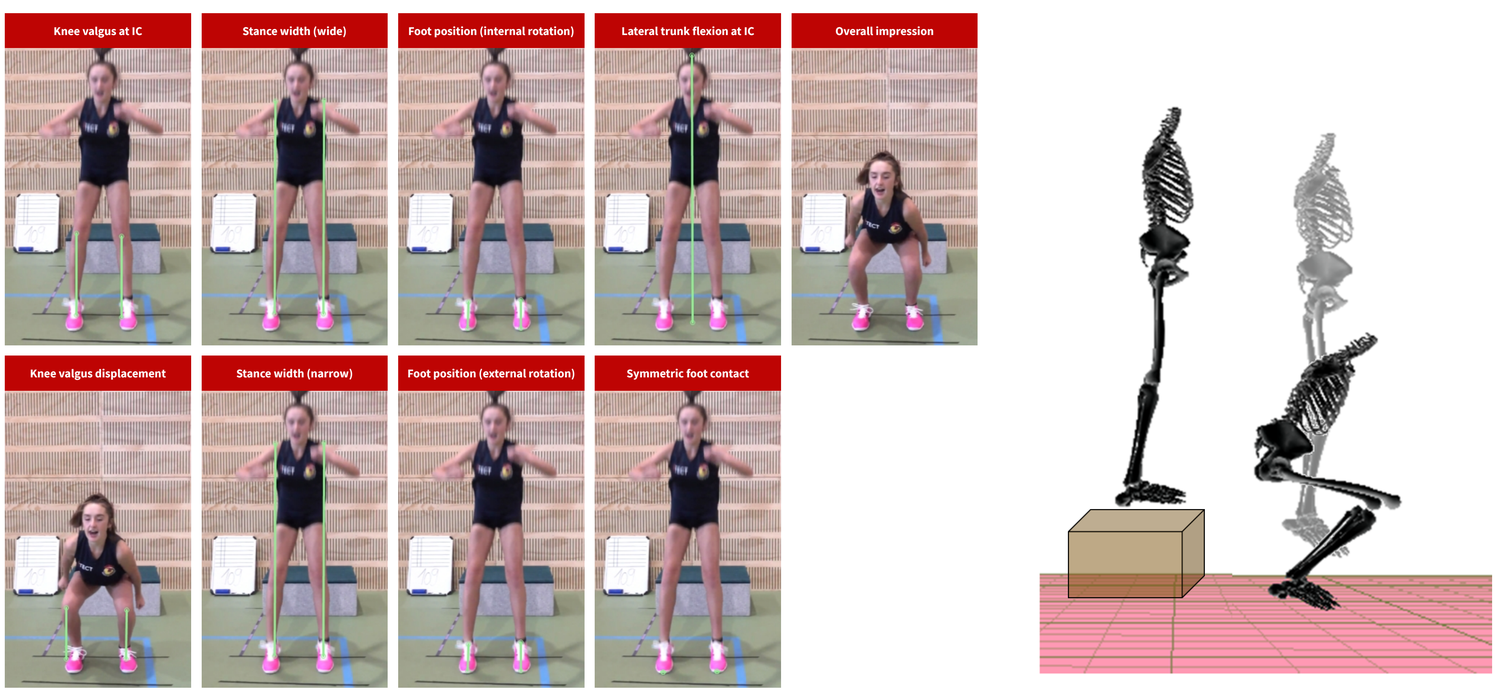
INTRODUCTION

Neuromuscular and biomechanical factors are often highlighted as important factors to address prevention of non-contact injuries, as these are potentially modifiable factors through training. The Landing Error Scoring System (**LESS**) is a 17-item clinical-based assessment tool to identify individuals displaying potentially high-risk biomechanics patterns during a drop-jump task. The **LESS** is scored by clinicians who evaluate aberrant lower extremity and trunk kinematics based on frontal and sagittal plane videos. This work systematically reviews the literature using the **LESS** as main outcome to address the psychometric properties and influencing factors of **LESS** scores.



METHODS

Three electronic databases were searched in March 2018 using "Landing Error Scoring System". All peer-reviewed English language articles using the **LESS** as main outcome were included (*n* = 38).

RESULTS

- **LESS** scores demonstrate good-to-excellent reliability, but concurrent validity of individual items against 3D motion capture is item dependent.
- The association between **LESS** scores and other screening tools is poor.
- The value of the **LESS** for predicting anterior cruciate ligament (ACL) injury incidence is unclear.
- Sex, previous ACL injury, and training program influence **LESS** scores (Figure).

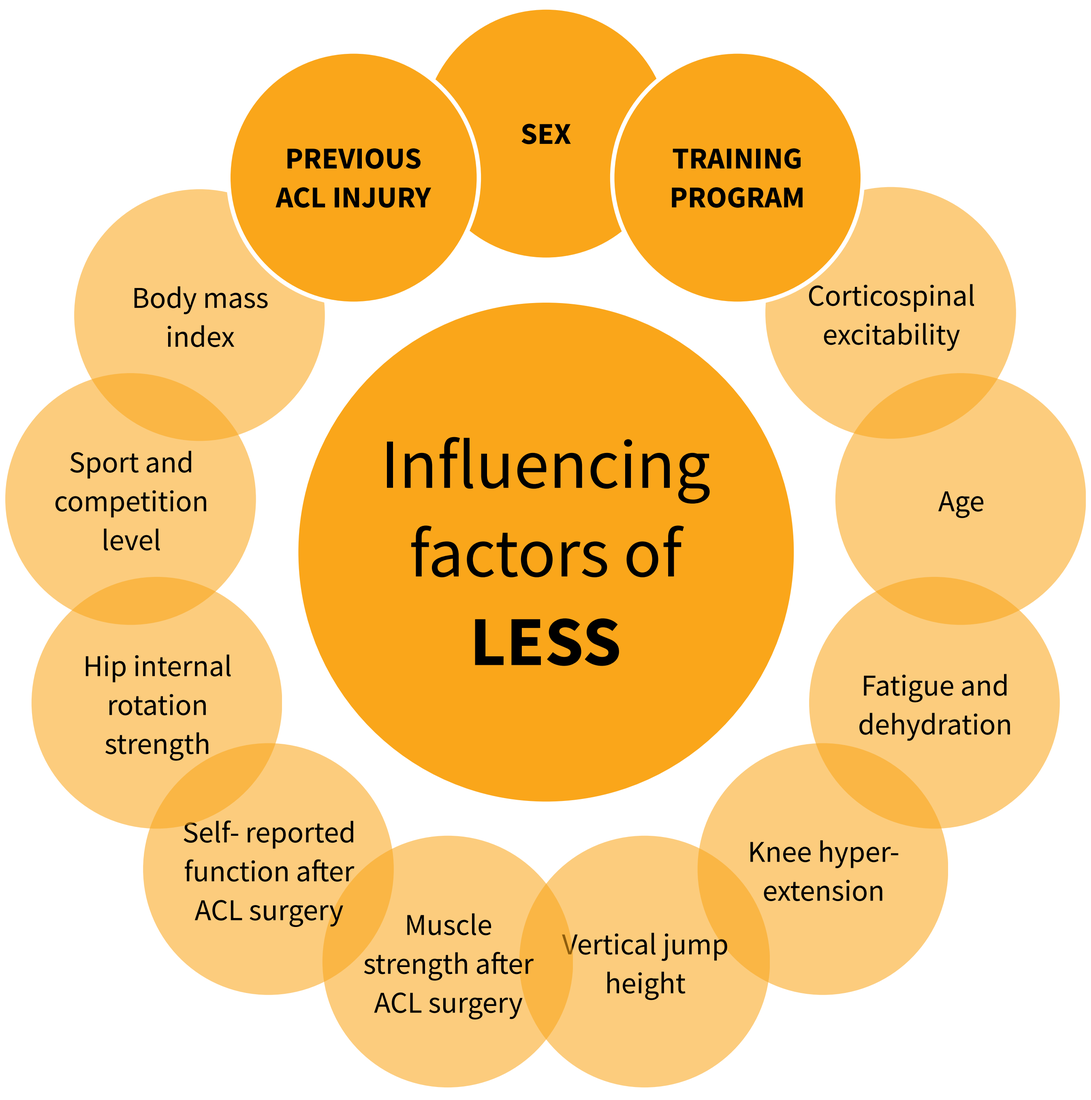


Figure. Factors proposed to influence **LESS** scores. The three factors with strong evidence are bolded.

CONCLUSION

Literature supports that the **LESS** is a reliable and generally valid screening tool for assessing movement patterns linked with injury risk with low financial, spatial, and temporal costs. Further work is needed to improve its concurrent and predictive validity for non-contact lower-extremity injuries.